

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

A NOTE ON THE MILLIPED GENERA
MYRMECODESMUS AND *ILYMA*
(POLYDESMIDA: STYLODESMIDAE)

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During recent attempts to comprehend and perhaps refine the existing classifications of the so-called "cryptodesmoid" millipeds, I had occasion to examine a fair variety of tropical species on a comparative basis. Tangential to the main purpose of this work I discovered some previously unsuspected synonymy, some of which forms the basis of the following note.

Myrmecodesmus

Myrmecodesmus Silvestri, 1910, Zool. Anz. 35:359. Type-species, *M. formicarius* Silvestri, by monotypy.

Ilyma Chamberlin, 1941, Bull. Univ. Utah, biol. ser. 6(4):24. Type-species, *I. orizaba* Chamberlin, by original designation and monotypy. [NEW SYNONYMY!]

Definition: A stylodesmoid genus in which the ozopores are stalked on segments 5, 7, 10, 13, and 16 and open on the surface of the paranota of segments 17, 18, and 19. Collum with ten marginal lobes, covering the head. Dorsum convex, with two major paramedian longitudinal series of three rounded tubercles each, those of segment 19 sometimes prolonged into an apically bilobed process extending beyond apex of 20th segment; paranota small, set low on body, the lateral margin normally bilobed.

Gonopod aperture narrowly transverse, its edges not flared or modified, coxae very large and carried mostly outside the body in the form of two opposed galeate structures, narrowly in contact medially. No evident sternal remnant present. Telopodites small, the prefemora elongate and parallel to distal edge of coxae on aboral side, without prefemoral processes; seminal groove terminating on a subapical branch beyond which the telopodite is multiramous or distally bifid (Figs. 1 and 2).

Commentary: Seven names have been based upon specimens referable to this group, some of these are known to be synonyms (see below) and others may possibly be found redundant—synonyms of each other or of

names published in other genera. As presently understood, *Myrmecodesmus* ranges between Louisiana and southern Mexico; two species occur in the United States.

The circumstances leading to the proposal of *Ilyma* are easy to reconstruct and are here recounted for the benefit of other people working on small polydesmoids. Aside from re-emphasizing the importance of a highly skeptical attitude when following in the footsteps of Dr. Chamberlin, the case is instructive in casting some doubt on the significance of characters which have hitherto been regarded as paramount.

Myrmecodesmus was proposed for a single species found in ant nests in Jalapa, Vera Cruz, Mexico. *Myrmecodesmus formicarius* was briefly but accurately described, and its major structural features carefully illustrated; the species was again treated by Silvestri in 1911, in connection with the description of a presumed congener, *M. modestus*, also from Jalapa. Rearranged descriptions and copies of the original drawings were published in 1940 by Attems, and since that time the genus has been mentioned in keys compiled by Chamberlin (1943) and Schubart (1945), and appeared in Loomis's checklist of Central American millipeds (1968). These appear to be essentially all of the literature references to the genus.

Silvestri (1910) noted that ozopores occurred on segments 5, 7, 10, 13, and 16 through 19, those of the first five segments opening through cylindrical processes at the posterior corner of the paranota, and those of segments 17-19 opening directly on the paranotal surface, and his figures showed these locations precisely.

When Chamberlin proposed *Ilyma* for the new species *I. orizaba* in 1941, he stated that pores occurred on segments 5, 7, 10, 13, and 16 (as also stipulated for the Cuban genus *Heteropente* Loomis) and that the dorsal tubercules of segment 19 were enlarged and produced posteriorly into a long, apically notched process covering the 20th segment. No other features were stipulated, no contrast was made with any other genus, nor was anything said about gonopod structure as the unique type of *orizaba* was a female. Subsequently a variety of other "Ilyma" species were named, *I. colotlipa* by Chamberlin in 1942, *potosina* and *morela* by Chamberlin in 1943, *cajuni* by Loomis in 1944, and finally *digitata* by Loomis in 1959, who provided a key to these taxa.

Despite the shortcomings of existing descriptions (the type-species and two other species being known only from females), it appears that the various forms described in *Ilyma* are congeneric. Such a relationship can be attested at least for *morela*, *cajuni*, and *digitata*, in which the gonopod structure is known. It must be confessed, however, that so far only small and schematic drawings exist for these forms, and that the concept of *Ilyma* as a group of related species rests upon purely non-sexual characters.

In trying to discover some justification for such family-group names as Styloidesmidae, Stioodesmidae, Hercodesmidae, Chytodesmidae, and others, I looked into the gonopod structure of as many species of small crypto-

desmoids as I had available, and shortly after having made a preparation of *Ilyma cajuni*, I recalled having seen something remarkably similar in the literature. Only a brief search through Lief. 70 of *Das Tierreich* was needed to locate the match, namely the gonopod drawing of *Myrmecodesmus formicarius* on page 312. Although I now have slight regard for pore characters in the definition of genera, I nonetheless investigated this variable by cleaning some of the detritus from the posterior segments of a specimen of *cajuni* and was interested but not surprised to find pores on segments 17, 18, and 19 in exactly the position illustrated by Silvestri (1910).

Because of the general overall similarity of the nominal species involved, I am now confident that pores occur on these segments also in *I. orizaba* and the other forms; and considering the similarity of gonopods in three species of *Ilyma* with those of *M. formicarius*, there seems to be no justification for continued recognition of *Ilyma*. That generic name, regardless of whatever its original justification may have been in its author's mind (he did not share this with his readers), was maintained subsequently, as in his 1943 key to Mexican styloidesmoids, only because of his assumption that pores occurred in these forms exclusively in the form of styliform pore-processes. An additional chore now imposed on present and future workers will be that of re-examining posterior paranota for the presence of pores overlooked through obsession with the conspicuous processes. One wonders how many "genera" will fall as a result. For such work I find that a small camel's hair brush, with the bristles cut off close to the handle, provides sufficient abrasiveness for cleaning segments. Doubtless an ultrasonic vibrator would be useful if available.

In the past, as noted, much emphasis has been placed on pore-processes (for which the term *porostele* is here suggested) at both the generic and family level. The fact that a given organism may have part of its pore series on stalks, and part opening flush on the segmental surface, seems to me a deathblow to the utility of that character at any level beyond that of species.

Obviously, the lesson here is that in the cryptodesmoid groups, as elsewhere in the Diplopoda, resort must be made first and last to gonopod characters in the definition of genera as well as higher categories.

Myrmecodesmus formicarius Silvestri

Figures 1, 2

Myrmecodesmus formicarius Silvestri, 1910, Zool. Anz. 35:360, figs. ♂ and ♀ syntypes (Coll. Silvestri, Portici), from Jalapa, Veracruz.

Ilyma cajuni Loomis, 1944, Psyche 51:175, figs. 6a, 6b. ♂ holotype (Mus. Comp. Zool.) from Venice, Plaquemines Parish, Louisiana. [NEW SYNONYMY!]

Association of the two cited names as synonyms is based upon a comparison of material identified as *I. cajuni* by H. F. Loomis with Silvestri's



FIGS. 1-2. *Myrmecodesmus formicarius* Silvestri, male genitalia: 1, gonopods in situ, ventral (aboral) aspect, with bases of 7th pair of legs shown, setae omitted from left side; 2, left gonopod mesal aspect.

published account of *formicarius*. The original gonopod drawing given for *cajuni* was made from the lateral aspect, that for Silvestri's species showed the gonopods in situ from an anterior (oral) view. I give here drawings made from comparable positions, based on the same gonopods, and think that if they are compared with the originals alluded to, anyone will be convinced that only one species is involved. I think that Silvestri was misled by the transparency of his preparation into showing some lines in the wrong focal plane, but it is clear that the drawing was made from the anterior side.

There is an interesting implication arising from the union of the two names. The range of *formicarius* is now known to extend from central Veracruz to the Mississippi delta, extensive enough to suggest the possibility that the species is capable of dispersion through commerce. Following are the localities of the distribution of *formicarius* known to me, some of them previously unpublished:

MEXICO: VERACRUZ: Jalapa, in nests of *Solenopsis geminata* F. and *Pheidole crassicornis* (Silvestri, 1910).

UNITED STATES: TEXAS: Cameron Co.: Rabb Ranch near Southmost, under palm logs, 12 December 1954, Leslie Hubricht. Guadeloupe Co.: near the Guadeloupe River at Sequin, 4 June 1955, Hubricht. Goliad Co.: Goliad State Park, 7 April 1955, Hubricht.

LOUISIANA: Plaquemines Par.; Venice, under bark of orange trees (Loomis, 1944).

It will be a matter of interest to investigate the relationship of this genus to the West African species referred to *Monachodesmus*, and some from the West Indies described in the genera *Lophodesmus* and *Heteropente*. One suspects that the number of valid genera in the Styloidesmidae may fall far short of the number of existing generic names!

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